

Snow was absent from the summit, and several species of brilliantly coloured lichen were collected there. Everlasting flowers grew in the rock chinks up to 16,500 feet. In the upper Alpine zone were two distinct species of giant groundsel and two of giant lobelia, seeds of which have been brought home. The greater part of our dried plants was lost, but the mosses and lichens were saved. A series of photographs of the Alpine vegetation in various stages of growth was taken by my colleague, Mr. C. B. Hausburg.

Mr. Oldfield Thomas has described, before the Zoological Society, the skulls and skins of the mammals collected by us. The most interesting is a new species of Rock Dassie (*Procavia Mackinderi*), whose nearest relative has recently been sent home from the Eldoma Ravine by Mr. F. J. Jackson (*P. Jacksoni*). Apart from these two species, no Rock Dassies have been found in any part of East Africa, nor are they known further south. *P. Mackinderi* appears to be isolated above the forest-zone (7000-10,000 feet) on Mount Kenya. A new Forest Dassie was obtained from a lower level.

This mountain block and the Rift Valley may be the necessary complements of one another.

Only a small collection of insects was obtained, chiefly in Kikuyu, but Prof. Poulton informs me that it includes new species of Coleoptera, Forficulidæ and Hymenoptera. H. J. MACKINDER.

THE DUKE OF ARGYLL.

AMONG the losses which science is from time to time called upon to deplore, not the least serious arise from the death of men of prominent public position who have taken an active personal interest in the advance of natural knowledge, and have done their best to promote it. The late Duke of Argyll was an eminent example of this type of man. Heir of a long line of illustrious ancestors, who for many generations have played a leading part in the stormy annals of their native country, called early in life to the legislature where he mingled conspicuously in the political conflicts of his time, full of



Kenya Peak, from the south-west.

The collection of birds has been described by Dr. Bowdler Sharpe. It includes a new eagle owl, as large as the European species, which feeds on the rats of the Alpine zone of Kenya, and there are three other new species. Generally the birds are similar to those of Mount Elgon, and in a lesser degree to those of Kilimanjaro. This is strikingly indicated by the fact that if Mr. Jackson had not explored Mount Elgon in 1890, nearly every bird we obtained would have been new.

The few human inhabitants of Kenya are Wandorobo, elephant hunters, who live in the forest up to its higher limit. On one occasion a party of them was seen at over 12,000 feet.

To west of Mount Kenya is the so-called Aberdare Range, traversed for the first time by the members of our expedition. It consists of two much denuded volcanic stumps, Nandarua and Sattima, rising to 12,900 and 13,200 feet respectively, and of a raised block, 9000 feet high, defined by parallel fault scarps, which strike in the same direction as the scarps of the Great Rift Valley.

wide and generous sympathies which prompted him to speak or to write on most of the great questions that agitated the public mind during his long and brilliant career, the Duke yet found time to read much and widely in science, and to keep himself acquainted with the progress of scientific discussion and achievement. He was happily gifted with a marvellous versatility, so that he could turn rapidly from one sphere of thought and activity to another far removed. Hence, amid the cares of State and of the administration of a great domain, as well as in the sorrow of domestic bereavement, he was often to be found immersed in the perusal of some recent treatise, or carrying on a research of his own in those parts of the scientific field which more specially interested him. Whether as an acute critic of the labours of others, or as an observer of nature himself, his devotion to these pursuits remained a characteristic feature of his life from the beginning to the end. It is difficult at present to define with precision the extent and value of the services of such a man in the progress of the science of his time. His

own original contributions may be little in amount or importance, but his example and his enthusiasm, together with his political activity and his social rank, combine to make him a force in the land, which powerfully aids any good cause which he espouses. The death of the Duke of Argyll is thus an event which must be chronicled with sincere regret in the pages of a scientific journal.

It was through geology that the Duke first came practically in touch with science, and it was in geological pursuits and criticisms that he found the most congenial employment of his leisure moments. It is just half a century since, on a visit to his property in the Island of Mull, he found that one of his tenants had gathered a number of fossil leaves and plants from the rocks of the neighbourhood. At once appreciating the geological significance of these remains, he investigated their mode of occurrence, and recognised their association with sheets of lava and volcanic ashes. The plants were pronounced by Edward Forbes to be probably of Miocene age, and thus was securely laid the first stone of the edifice that has since been reared in illustration of the volcanic history of the Inner Hebrides. It is matter for regret that the Duke never followed up this important discovery.

Other geological fields attracted him, where he found ampler material for the exercise of that critical acuteness and the display of that forensic style of argument which made his writings so lively and so pungent. He had imbibed his earliest ideas of geological causation in the school of the cataclysmists, and to these ideas he adhered to the last. When the earlier views of Hutton and Playfair with regard to the denudation and sculpture of the land were revived and began to spread among the younger men, the Duke raised his protest against them, and poured on them the contempt and ridicule which they seemed to him to deserve. As they grew in acceptance, both in this and other countries, and as their advocates increased in number and in confidence, his vehemence of declamation seemed to augment in proportion.

Nor was this the only line along which the modern tendency in geological speculation seemed to the Duke to be running in an entirely wrong direction. When he began to interest himself in these questions, Agassiz' doctrine, that not only Britain but a large part of Europe was once buried under land-ice, had not been generally accepted. The geologists of this country preferred to account for the phenomena by supposing that the land had been submerged in a sea across which floating ice drifted. The Duke of Argyll was never able to accept the modern doctrine, except in a limited degree. He admitted the former existence of local valley-glaciers, but could not recognise the force of the evidence adduced to show that not only the valleys, but the surrounding hills had once been over-ridden by a vast sheet of ice.

The rise of the modern school of evolution afforded the Duke full scope for the exercise of his acute reasoning power and keen critical faculty. In article after article, address after address, and volume after volume, he subjected the doctrines of that school to the closest scrutiny. It may be freely admitted that he detected here and there a fallacy, and pointed out a conclusion different from, but not less probable than, that which his opponents had drawn. But perhaps his most valuable service lay in that border-land of philosophy and science in which he specially loved to exercise his thoughts and his pen. Even when men of science differed widely from his conclusions, they could not but admit that in his "Reign of Law" and his "Unity of Nature," he showed his wide range of his reading, the clearness and vigour of his reasoning powers, the force and eloquence of

his style, the grasp he had of some of the more difficult scientific problems of his day, the strong bent of his nature towards metaphysics, and, above all, the lofty tone of his sentiments in regard to the moral nature and destiny of man.

The Duke of Argyll was essentially a man of action, to whom the stir of conflict and the stimulus of controversy were not uncongenial. Even in his scientific discussions he could not always quite forego the style in which he vilipended the opposite party in the House of Lords or in the public prints. He seemed sometimes hardly to realise the full extent and meaning of the evidence which he was criticising. In conversation, indeed, he might appear for a time to be impressed by the force of this evidence, and be willing to admit that the truth might, perhaps, lie somewhere between his own views and those to which he was opposed. But the force of early conviction or prepossession would, in the end, be too strong for him, and possibly the next morning his opposition would be found to be as complete and confident as ever. Unflinching and resourceful as an antagonist, enforcing with almost passionate enthusiasm what he held to be the truth, independent and self-reliant alike in his opinions and his actions, dignified and courteous after the manner of an older time, he formed altogether a striking and picturesque personality.

But the energy of the doughty debater was combined with much personal kindness even towards those from whom he most seriously differed. Above all the other features of his character there shone out an intense love of nature and an eager desire to know more of her processes and laws. Year after year the Duke would spend weeks at a time in his yacht among the Western Isles, which he loved with all the enthusiastic devotion of one who was born and spent his youth among them. He was familiar with that western coast from one end to the other, under every change of sunlight and shadow. He had sketched every peak and crag and island, and he delighted to recall from his sketch-books the charm with which these scenes had fascinated him. To all their obvious attractions for the ordinary visitor his geological knowledge enabled him to join the fresh interest which is given to them by an acquaintance with the history of their remote past. In this way he kept himself in touch with some of the aspects of nature that most vividly appealed to his imagination. His poetic temperament found refreshment in these frequently renewed sojourns amid the varied scenery of the West of Scotland. As shown by his published writings, his wide acquaintance with modern English poetry furnished him with many an apt quotation and allusion. Tennyson's poetry seemed to be particularly familiar to him, inasmuch that a casual citation of a line or expression from that poet by one of the company would sometimes lead the Duke to quote from memory the whole passage.

As the head of a great historic clan, the Duke of Argyll was a true Scot, who had studied his country's history both geological and political, and had made himself personally acquainted with a large part of its surface. The geological problems that more particularly engaged his attention were largely those which his own Highland hills and glens had suggested to his mind. Now and then, in the midst of an eager conversation, a Scottish word or expression would come most readily to his lips as conveying the meaning he wished to express. Of his general services to the country at large this is not the place to speak. But we may confidently anticipate that when some future historian shall review the various forces which have furthered the advance of science in this country during the Victorian age, a well-marked place will be assigned to the services rendered by the Duke of Argyll.

A. G.